MULTIMEDIA UNIVERSITY

STUDENT IDENTIFICATION NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2017/2018

BDS3014 – DECISION SUPPORT SYSTEMS FOR KNOWLEDGE MANAGEMENT

(All Sections / Groups)

06 MARCH 2018
09.00 a.m – 11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This Question paper consists of 4 pages with 2 parts only.
2. Attempt **ALL** questions in **Part A** and **Part B**. The distribution of the marks for each question is given.
3. Please write all your answers in the Answer Booklet provided.

PART A: CASE STUDY QUESTION

Read the following case study and answer ALL questions (i.e. Question 1 to 4) below it. The distribution of marks for each question is given.

Case Study: KMS in the new cloud and Web 2.0 environment.

Given the compelling economic attractions of this computing service modality, many organizations are likely to embrace it despite its current problems. Gartner (the global IT research and advisory company) anticipates a massive cloud computing explosion, fuelled largely by the economic turmoil of the last few years. In a recently published report, Gartner expects the global cloud services revenue to reach nearly US$150 billion by 2014. This level of spending, according to Gartner's Vice President, Ben Pring, is directly related to increased economic pressures which made organizations scrutinize every expenditure (Hickey, 2010).

Small to medium enterprises (SMEs) are likely to be among the main beneficiaries of this computing service due to their limited resources which constrain their ability to make large ICT investments (Sultan, 2010a, 2010b, 2010c, 2010d; Sultan, 2011). Given the resources issues of knowledge management systems (KMS), cloud-based KMS could present SMEs with an opportunity to take advantage of a domain traditionally reserved for large and resourceful organizations.

Furthermore, the increasing popularity of online social networking and its emergent reputation as a valuable knowledge-sharing tool has further increased the affordable options to many organizations, particularly SMEs, for their KM needs. Indeed, many of the newly emerging KM products seem to offer cloud and social networking functionality.

Despite, the economic and flexibility attractions of cloud computing there are still many issues that it needs to overcome: security, vendor-lock and outages are the most problematic (Sultan & Sultan, 2012). Security is no doubt one of the main concerns for organizations contemplating the adoption of this ICT service modality. A survey of 244 chief information officers and IT executives conducted in 2008 by IDC (International Data Corporation), the market research firm, revealed that 75% of the respondents rated security as their main cloud computing concern while performance and availability were the next two concerns for 63% of the respondents (Cisco, 2009). Moreover, various governments, such as those in the European Union (EU), have privacy regulations that prohibit the transmission of some types of personal data outside the EU. This issue, however, is no longer a problem as many cloud vendors now (such as Amazon, Microsoft and others) were able to establish some of their cloud data centres in various locations across the EU region and elsewhere in the world and can offer their cloud clients the option of where they want their data to be stored.

Another concern is vendor-lock. Currently, many cloud providers offer their services through proprietary Application Programming Interfaces (APIs). This means that organizations that sign up for the services of cloud providers will find it difficult to change cloud providers in the same way as, for example, changing an electricity supplier.

Continued...

Lastly, reliability or outages can also be a serious problem for cloud users. Many of the big cloud providers such as Salesforce.com, Amazon, Google and Microsoft saw their systems afflicted with outages which affected large scores of their customers (Clarke, 2011; Leavitt, 2009; Naughton, 2009). One of the latest such events occurred in April 2011 when Amazon's EC2 (Elastic Compute) cloud service experienced an outage when its northern Virginia data centre site was affected. Amazon attributed the incidents to a networking glitch that caused many of its storage volumes (used to store data when an EC2 instance is created) to create new backups of themselves, thus filling up Amazon's available storage capacity and kicking off a series of connectivity problems that affected many of the cloud provider's customers (Pepitone, 2011).

Cloud vendors with a well-established record in this market seem to be capitalizing on this KM trend. Google has recently named one of its internal groups "the knowledge group", known previously as the search group (Arrington, 2011), mostly likely in recognition of the importance of the issue of knowledge for the future of search engines. Saleforce.com, a pioneer in cloud-based Customer Relationship Management (CRM) systems, Microsoft and IBM have all introduced KM solutions based on cloud computing and Web 2.0 technologies.

(Sources: Adapted from: Sultan, N. (2013). Knowledge management in the age of cloud computing and Web 2.0: Experiencing the power of disruptive innovations. *International Journal of Information Management, 33*(2013), 160-165.)

QUESTION 1

Describe **FIVE (5)** advantages of cloud computing to SMEs. Can you think of other advantages that are not mentioned in the case? (10 marks)

QUESTION 2

Describe **FIVE (5)** concerns that SMEs might have on cloud computing. You may include other answers that are not mentioned in the case study. (10 marks)

QUESTION 3

Discuss **SIX (6)** selection criteria when choosing a cloud vendor. (6 marks)

QUESTION 4

Define KMS and describe the **SIX (6)** steps of the KMS cycle. (14 marks)

(Total: 40 marks)

Continued...

PART B: STRUCTURED QUESTIONS

Answer ALL questions. Each question carries 30 marks.

QUESTION 1

a) Today's business environment that creates pressure on organizations can be divided into **FOUR (4)** major categories. Identify and discuss these categories. (8 marks)

b) Models can represent systems or problems and can be differentiated based on their degree of abstraction. Identify and describe **FOUR (4)** different types of models. (8 marks)

c) Based on the below Excel worksheet, answer the following questions.

	A	B	C	D	E	F	G	H
1	Commission rate	5%						
2	Sales Report for Tony Electrical Store 2017							
3	Region	Quarter1	Quarter 2	Quarter 3	Quarter 4	Total	Average	Reward
4	North	RM28,203.00	RM10,508.00	RM14,579.00	RM20,992.00			
5	South	RM28,610.00	RM25,226.00	RM27,580.00	RM26,369.00			
6	West	RM10,327.00	RM11,659.00	RM10,960.00	RM25,903.00			
7	Sales	RM67,140.00	RM47,393.00	RM53,119.00	RM73,264.00			
8	Commission							
9								
10	Quarterly Sales							
11	Enter Quarter:	Quarter2						
12	Sales:							

i) Write a formula to calculate the TOTAL sales for South region. (2 marks)

ii) Write a formula to calculate the AVERAGE sales for West region. (2 marks)

iii) Create a formula to display the REWARD for North region using conditional logic. If total sales is more than RM100,000 and average sales is larger than RM20,000 then the reward would be "Diamond" else display "None". (2 marks)

iv) Write a formula to calculate the COMMISSION for Quarter3. An absolute cell references should be used where appropriate.
Commission = Sales * Commission Rate (2 marks)

Continued...

v) Use the LOOKUP function to display the SALES value in cell B12 with exact match based on the Quarter that user has entered in cell B11. Write out the formula. (2 marks)

d) Explain **FOUR (4)** limitations of an expert system. (4 marks)

(Total: 30 marks)

QUESTION 2

a) Identify and explain **FIVE (5)** Decision Support Systems classifications of the Association for Information System Special Interest Group on DSS (AIS SIGDSS). (10 marks)

b) Data mining is tightly positioned at the intersection of many disciplines, including statistics, artificial intelligence, machine learning, management science, information systems and databases. Describe **FIVE (5)** main characteristics of data mining. (10 marks)

c) Explain what creativity is and how Group Support Systems (GSS) can support creativity. (10 marks)

(Total: 30 marks)

End of Paper